

**WHAT IS CLAIMED IS:**

1. A mobile terminal circuit for transmitting radio frequency identification (RFID) data to an RFID reader, comprising:
  - 5 an antenna for communicating with the RFID reader;
  - a memory portion for storing the RFID data together with mobile terminal protocol data;
  - a codec for encoding the RFID data into RFID codec data;
  - a modulator connected to the codec, for modulating the RFID codec data
  - 10 into RFID modulation data;
  - a processor connected to the memory portion, for extracting RFID data stored in the memory portion and delivering the extracted RFID data to the codec;
  - a detector connected to the antenna and the processor, for informing the
  - 15 processor of an approach of the RFID reader;
  - a first clock generator connected to the processor and the memory portion, for providing operation timing to the processor and the memory portion;
  - and
  - a second clock generator connected to the first clock generator, the codec,
  - 20 and the modulator, for providing operation timing to the codec and the modulator.
2. The mobile terminal circuit of claim 1, wherein the processor extracts the RFID data from the memory portion in response to information indicating the approach of the RFID reader, provided from the detector, and
- 25 delivers the extracted RFID data to the codec.
3. The mobile terminal circuit of claim 1, wherein the detector includes an interrupt port of the processor.
- 30 4. The mobile terminal circuit of claim 1, wherein the detector

includes a frequency detector.

5. The mobile terminal circuit of claim 1, further comprising a rectifier for rectifying a voltage detected from a signal received via the antenna  
5 and delivering the rectified voltage to the processor.

6. A mobile terminal circuit for transmitting radio frequency identification (RFID) data to an RFID reader, comprising:

an antenna for communicating with the RFID reader;

10 a first clock generator for providing a first operation timing to each electric element of the mobile terminal circuit;

an RFID module including an RFID memory for storing the RFID data; a codec for encoding the RFID data into RFID codec data; a modulator connected to the codec, for modulating the RFID codec data into RFID modulation data;  
15 and a second clock generator connected to the first clock generator, the codec, and the modulator, for providing a second operation timing to the codec and the modulator;

a power block for providing operation power to electric elements of the mobile terminal circuit;

20 a processor connected to the power block, the first clock generator, and the RFID module, for enabling an operation of the power block; and

a detector connected to the antenna and the processor, for informing the processor of an approach of the RFID reader;

wherein the processor commands the power block to provide electric  
25 power to the RFID module, and the RFID module generates the RFID modulation data using the RFID memory, the codec, and the modulator.

7. A mobile terminal circuit for transmitting radio frequency identification (RFID) data to an RFID reader, comprising:

30 an antenna for communicating with the RFID reader;

a first clock generator for providing a first operation timing to each electric element of the mobile terminal circuit;

a memory portion for storing the RFID data together with mobile terminal protocol data;

5        an RFID module including a codec for encoding the RFID data into RFID codec data; a modulator connected to the codec, for modulating the RFID codec data into RFID modulation data; and a second clock generator connected to the first clock generator, the codec, and the modulator, for providing a second operation timing to the codec and the modulator;

10       a power block for providing operation power to the electric elements of the mobile terminal circuit;

a processor connected to the power block, the first clock generator, the memory portion, and the RFID module, for enabling an operation of the power block, extracting the RFID data, and delivering the extracted RFID data to the  
15 RFID module; and

a detector connected to the antenna and the processor, for informing the processor of an approach of the RFID reader;

wherein the processor commands the power block to provide electric power to the RFID module, and the RFID module generates RFID modulation  
20 data by encoding and modulating the received RFID data.

8.       The mobile terminal circuit of claim 7, wherein the processor commands the power block using an enable pin.

25       9.       The mobile terminal circuit of claim 7, wherein the detector is included in the processor.

10.       The mobile terminal circuit of claim 7, wherein the detector includes a frequency detector for detecting a variation in frequency.

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11. A method for identifying a radio frequency in a mobile terminal, comprising the steps of:

detecting, by a detector, an approach of a radio frequency identification (RFID) reader and informing a processor of the approach of the RFID reader;

5 extracting, by the processor, RFID data from a memory portion and delivering the extracted RFID data to a codec, upon detecting the approach of the RFID reader;

encoding, by the codec, the delivered RFID data into RFID codec data; and

10 modulating, by a modulator, the RFID codec data into RFID modulation data, and transmitting the RFID modulation data to the RFID reader.

12. A method for identifying a radio frequency in a mobile terminal including a radio frequency identification (RFID) module, comprising the steps  
15 of:

informing, by a detector, a processor of an approach of an RFID reader, upon detecting the approach of the RFID reader;

extracting, by the processor, the RFID data from a memory portion and delivering the extracted RFID data to the RFID module, upon detecting the  
20 approach of the RFID reader; and

encoding and modulating, by the RFID module, the delivered RFID data and transmitting the modulated RFID data to the RFID reader.

13. The method of claim 12, wherein the processor commands a  
25 power block to provide electric power to the RFID module upon detecting the approach of the RFID reader.

14. A mobile terminal circuit for transmitting radio frequency identification (RFID) data to an RFID reader, comprising:

30 an antenna for communicating with the RFID reader;

a memory portion for storing the RFID data together with mobile terminal protocol data;

an RFID module for performing an RFID function and including a second clock generator for providing RFID operation timing using a system  
5 clock output from a first clock generator;

a processor connected to the memory portion and the RFID module, for extracting the RFID data stored in the memory portion and delivering the extracted RFID data to the RFID module; and

a detector connected to the antenna and the processor, for informing the  
10 processor of an approach of the RFID reader;

wherein the first clock generator is connected to the processor and the memory portion, and provides operation timing to the processor and the memory portion.

15        15.     The mobile terminal circuit of claim 14, wherein the RFID module includes a codec for encoding the RFID data into RFID codec data; and a modulator connected to the codec, for modulating the RFID codec data into RFID modulation data.

20        16.     A mobile terminal circuit for transmitting radio frequency identification (RFID) data to an RFID reader, comprising:

an antenna for communicating with the RFID reader;

a first clock generator for providing a first operation timing to each electric element of the mobile terminal circuit;

25        an RFID module for performing an RFID function;

a power block for providing operation power to the electric elements of the mobile terminal circuit;

a processor connected to the power block, the first clock generator, and the RFID module, for enabling an operation of the power block; and

30        a detector connected to the antenna and the processor, for informing the

processor of an approach of the RFID reader;

wherein the processor commands the power block to provide electric power to the RFID module, and the RFID module generates the RFID data.

5           17.     The mobile terminal circuit of claim 16, wherein the RFID module includes an RFID memory for storing the RFID data; a codec for encoding the RFID data into RFID codec data; a modulator connected to the codec, for modulating the RFID codec data into RFID modulation data; and a second clock generator connected to the first clock generator, the codec, and the  
10 modulator, for providing a second operation timing to the codec and the modulator.

          18.     A mobile terminal circuit for transmitting radio frequency identification (RFID) data to an RFID reader, comprising:  
15           an antenna for communicating with the RFID reader;  
          a first clock generator for providing a first operation timing to each electric element of the mobile terminal circuit;  
          a memory portion for storing the RFID data together with mobile terminal protocol data;  
20           an RFID module for processing the RFID data;  
          a power block for providing electric power to the electric elements of the mobile terminal circuit;  
          a processor connected to the power block, the first clock generator, the memory portion, and the RFID module, for enabling an operation of the power  
25 block, extracting the RFID data, and delivering the extracted RFID data to the RFID module; and

          a detector connected to the antenna and the processor, for informing the processor of an approach of the RFID reader;

          wherein the processor orders the power block to provide the electric  
30 power to the RFID module, and the RFID module generates the RFID data.

19. The mobile terminal circuit of claim 18, wherein the RFID module includes a codec for encoding the RFID data into RFID codec data; a modulator connected to the codec, for modulating the RFID codec data into  
5 RFID modulation data; and a second clock generator connected to the first clock generator, the codec, and the modulator, for providing a second operation timing to the codec and the modulator.